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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,777	10/30/2003	Yi Yeol Lyu	3811-0130P	6882

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EXAMINER

ZIMMER, MARC S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,777

Applicant(s)

LYU ET AL.

Examiner

Marc S. Zimmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 16 is/are rejected.
- 7) ☒ Claim(s) 9-15 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/31/03</u> | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergstrom et al., U.S. patent # 5,468,829. Bergstrom discloses the preparation of an elastomer that entails reacting a linear polydiorganosiloxane adhering to the formula at the bottom of column 2, which is structurally homologous to the second monomer of the instant invention, with any one of the three materials adhering to formulae (2), (3), or (4). Relevant to the present discussion, the starting material described by formula (3) is structurally homologous with the first monomer of the instant invention.

The approach for forming the aforementioned elastomer, on the other hand, employs a tin salt whereas claim 1 calls for the utilization of an acid- or alkaline catalyst. However, claim 1 takes the form of a product-by-process claim wherein the product is a resin and every limitation recited thereafter is directed to the process of making said resin. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process" *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Although Bergstrom

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utilizes a different catalyst, the product derived from Bergstrom's system would, nonetheless, be the same given that the organosilicon reactants are the same and the role of a catalyst is merely to lower the barrier of activation to conversion to products. That is, the catalyst is not integrated into the final product hence the product is effectively the same. "The Patent Office bears a lesser burden of proof in making out a case of *prima facie* obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

Beyond the differences in catalyst, it is acknowledged that the reference does not expressly provide for a solvent. However, the modification of Bergstrom's invention to include a solvent can hardly represent a grounds for patentability. Indeed, solvents are ubiquitously employed in reaction systems/compositions of all types and especially where the product is a polymer that is not readily manipulated due to an inherently high viscosity. "It is prima facie obvious to add a known ingredient to a known composition for its known function." *In re Lindner* 173 USPQ 356; *In re Dial et al* 140 USPQ 244. As for claim 7, the solvents recited therein are conventional in the sense that they are able to solvate the product and are inert to reaction.

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It is further acknowledged that the range defining the number of repeat units in the linear alkoxy-terminated polymer corresponding to the second monomer of the instant invention is some two orders of magnitude larger than "n". It has been ruled that, in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Further, Applicant has established no criticality whatsoever for the mandated values of "n".

Concerning claim 2, Examples 1 and 2 discloses systems where the compound corresponding to the second monomer comprises 10.6 and 5.3 mol% of the reactants. It can only be assumed that the polymer makes up the molar balance of the reactants.

As for claim 4, the quantity of catalyst is disclosed in terms of its weight contribution to the entire system as opposed to a molar contribution which, incidentally appears to be an odd way of claiming the amount of catalyst insofar as it is not a reactant and the two expressions cannot be directly correlated without sufficient knowledge of the molecular weight of the organosilicon compounds since moles of organosilicon reactants may only be determined if one knows their molecular weight(s). That being said, this limitation is, nonetheless, obvious as the skilled artisan will immediately appreciate that catalyst quantity is a result-effective variable impacting the rate of reaction among other things. "Discovering an optimum value of a result effective variable involves only routine skill in the art." *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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Concerning claim 5, the amount of water is disclosed in terms of the relative humidity of the atmosphere surrounding the curable composition as opposed to the molar ratio of monomer-to-water set forth in the claim. Just as the skilled artisan is capable of easily optimizing the amount of catalyst, optimizing the amount of moisture is, likewise, within the abilities of one having ordinary skill. (Moisture content will influence the rate of hydrolysis and, in turn, condensation as well as the extent of crosslinking since hydrolysis is first necessary before the organosilicon compounds may be condensed.)

As for claim 6, a matching temperature range is revealed in column 5, lines 19-24 but the reference is silent as to the time required for curing. Again, this parameter is easily ascertained by the skilled practitioner as a matter of routine experimentation.

As for claim 8, this limitation is inherently satisfied given that similar starting materials are used and in similar molar quantities.

Concerning claim 16, the phrase "for a semiconductor device" is a recitation of intended use. Section 2112.02 of the MPEP provides direction as to how phrases such as this are to be treated: "If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). See also *Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) ("where a patentee defines a

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structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation"); *Kropa v. Robie*, 187 F.2d at 152, 88 USPQ2d at 480-81 (preamble is not a limitation where claim is directed to a product and the preamble merely recites a property inherent in an old product defined by the remainder of the claim). Accordingly, claim 16 essentially claims a film derived from the composition of claim 1. Column 3, lines 35-36 states the composition taught by Bergstrom may be dip-coated, wiped, or sprayed onto a substrate. Moreover, the resulting film would inherently be insulating by virtue of its formation from equivalent materials.

Allowable Subject Matter

Claims 9-15 and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reference does not contemplate forming a layer of the disclosed composition on a silicon wafer nor does it suggest that the elastomer has utility in semiconductor manufacture.

Two patents (U.S. patent nos. 6,660,822 and 6,623,711) assigned to the present assignee disclose similar compositions and methods of using the same but neither discloses a reactant analogous to the second monomer.

For the record, copending application serial no. 10/722,460 discloses an invention somewhat close in scope to that presently contemplated. That being said, it could not be ascertained what would have motivated the skilled artisan to incorporate an organosilicon reactant adhering to formula (I) of claim 1 of the copending application.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 21, 2004

Marc Zimmer

Marc Zimmer

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